Credit Name: CSE 2140 2nd Language Programming										
Assignment Name: Digits Mastery										
How has your program changed from planning to coding to now? Please explain?										

I started coding using the same logic as the Digits **Skillbuilder**, but planned to make some adjustments to meet the digits **mastery** criteria.

1. I started off the program with Declaring the Variables for the Ones place value, Tens place value, and Hundreds place value, as it will be later used when computing the userinput values, and it is also used when printing the output. After this, I introduced the scanner.

```
//Declare the place value variables:
int ones = 0;
int tens = 0;
int hundreds = 0;


Scanner userInput = new Scanner(System.in);
```

2. I prompted the user to enter a three digit number, using system.out.print. In order to store the value of the userinput, I declared a new int “number” and assigned it to carry the value of the userInput.

```
//Prompt user to enter a three digit number:
System.out.print("Please enter a three digit number: ");

//store the userInput in the "number" variable:
int number = userInput.nextInt();
```

3. I decided to add an error message, only displayed when the user entered a number greater than 999, or less than 100. In other words, if the userInput was more or less than 3 digits, an error message was displayed. If the user entered a 3 digit number, then the code will just run normally. I had some issues with creating this, and talked about it in my error log.

```
 //system error message if an invalid input is given from user:
if (number > 999) {
System.out.println("\nError! Number is more then 3 digits.");
}
if (number < 100) {
System.out.println("Error! Number is less then 3 digits.");
}

else if (number > 100 && number < 999) {
```

4. If the user input is 3 digits, then the code moves on to the next step, computation. Using the formulas (shown below), I was able to calculate the values of the hundreds place, tens place, and ones place. These values were assigned accordingly, into their own variable.

```
//Compute the values:
hundreds = (number / 100)%10;
tens = (number / 10)%10;
ones = (number / 1)%10;
```

5. After computation, it is now time to print the output values, and give the user the answer. Using System.out.print, the program displays the number initially inputted by the user, along with the values of the ones place digit, tens place digit, and hundreds place digit.

```
// print output for user
System.out.println("The number " + number + " has the following place values:");
System.out.println("Hundreds place digit: " + hundreds);
System.out.println("Tens place digit: " + tens);
System.out.println("Ones place digit: " + ones);
}
```

End of program!